REMARKS

Claims 1-18 have been examined. By this Amendment, Applicants amend the claims to better conform them to U.S. patent practice. Further, new claims 19-23 have been added.

Claim Rejections – 35 U.S.C. § 101

Claim 18 is rejected under 35 U.S.C. § 101 as allegedly being directed towards non-statutory subject matter. In view of the amendments to claim 18, Applicants submit that the claim complies with the requirements of 35 U.S.C. § 101. Accordingly, withdrawal of the 35 U.S.C. § 101 rejection is respectfully requested.

Specification Amendment

By this Amendment, Applicants amend page 13, lines 3-8 of the Specification. Applicants respectfully request entry of the amendment.

Claim Rejections – 35 U.S.C. § 103

Claims 1-18 are rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent No. 7,236,524 to Sun *et al.* ("Sun"). For *at least* the following reasons, Applicants respectfully traverse the rejection.

Applicants submit that claim 1 is patentable over Sun. For example, claim 1 relates to a prediction mode determination method. The prediction mode determination method comprises, *inter alia*, (a) grouping a plurality of prediction modes into a first number of groups, and (b) selecting one prediction mode for each of the first number of groups, respectively performing predictions for a block in the selected prediction modes, and calculating prediction errors for the predictions performed in each of the selected prediction modes. The prediction mode

determination method further comprises (c) <u>performing predictions for the block in **other**</u> <u>prediction modes belonging to a specific group **among the first number of groups**. The</u> <u>specific group includes a prediction mode among the selected prediction modes with a smallest</u> <u>prediction error among the calculated prediction errors</u>. Prediction errors for the predictions performed in each of the other prediction modes are calculated, and a prediction mode for the block is decided <u>according to the calculated prediction errors in the **other** prediction modes</u>.

The Examiner contends that Sun, in FIGS. 9-15, along with col. 2, lines 30-40, col. 5, lines 1-17, and col. 6, lines 45-65 discloses each and every one of the above noted features of claim 1. See Office Action, pages 3 and 4. Applicants respectfully disagree.

Sun is directed to a method of intraframe coding in which correlation between adjacent blocks is exploited to predict a target block based on prediction modes used in adjacent blocks (*see* Sun: Abstract, col. 2, lines 30-38). In the Sun reference, it is disclosed that the "present inventors have determined that prediction modes may be ordered in a manner generally consistent with their likelihood of producing a reduced prediction error. With the prediction modes ordered according to their general likelihood of producing a lesser prediction error, the resulting data itself may have a greater tendency to be more consistently ordered" (Sun, col. 5, lines 1-8). Sun discloses various exemplary prediction mode orders in FIGS. 4-8 and their related description in col. 5, line 41 to col. 6, line 29.

Sun, however, does not disclose that after calculating errors related to the initial prediction mode(s) (one, or two at most) in a given prediction mode order for a block, further predictions are performed on the block in **other** prediction modes belonging to a specific group **among the first number of groups**, wherein the specific group includes a prediction mode <u>**among the selected prediction modes with a smallest prediction error among the calculated**</u>

prediction errors as required by claim 1. For instance, there is no **grouping of the prediction modes** as set forth in claim 1. Rather, Sun's intraframe coding method involves **sequentially** traversing through the prediction modes in a given order to find the most probable prediction mode (Sun, col. 7, lines 35-45, and col. 8, lines 25-39).

More particularly, taking FIG. 4 of Sun as an example, Applicants submit that there is no grouping of prediction modes (e.g., the vertical prediction modes such as Mode 0 - vertical prediction, Mode 6 - vertical right prediction, and Mode 7 - vertical left prediction) in Sun. Since Sun clearly does not disclose any grouping of the prediction modes, it follows that Sun cannot disclose performing predictions for the block in **other prediction modes belonging to a specific group** among the first number of groups which includes a prediction mode **among the selected prediction modes with a smallest prediction error among the calculated prediction errors**.

Instead, Sun's method calls for simply moving on to the next most probable prediction mode according to the subject prediction mode order being used. That is, only a sequential ordering based on the most likely prediction mode is generated in Sun rather than any implementation of a grouping mechanism (e.g., col. 7, line 35-45).

As such, it is clear that Sun does not disclose grouping a plurality of prediction modes into a first number of groups, performing predictions for a block in the selected prediction modes, and performing predictions for the block in other prediction modes belonging to the specific group among the first number of groups which includes a prediction modes having a smallest prediction error as set forth in claim 1.

In view of the foregoing, Applicants submit that Sun does not disclose each one of the features of claim 1 in as complete detail as set forth in the claim. Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. § 102(e) rejection of claim 1.

Claims 2-8 are patentable *at least* by virtue of their dependency. Further, claim 3 is patentable for reasons other than its dependency.

For example, claim 3 recites that a first prediction mode corresponding to a <u>vertical direction</u> and adjacent prediction modes corresponding to directions <u>adjacent to the vertical direction</u> are grouped into a first group, a second prediction mode corresponding to a <u>horizontal direction</u> and adjacent prediction modes corresponding to directions <u>adjacent to the horizontal direction</u> are grouped into a second group, and remaining prediction modes corresponding to <u>remaining directions</u> are grouped into a third group. As already discussed above with respect to claim 1, Sun does not disclose any grouping of prediction modes whatsoever. Moreover, Sun does not even remotely disclose or suggest the detailed grouping method set forth in claim 3.

Claim 9 recites features similar to those discussed above with respect to claim 1. Therefore, claim 9 is patentable for *at least* reasons similar to those given above with respect to claim 1. Further, claim 9 is patentable for additional exemplary reasons.

For example, claim 9 recites performing predictions for the block in prediction modes corresponding to prediction directions adjacent to a prediction direction of <u>a first prediction mode, among the vertical prediction mode, the horizontal prediction mode, and the DC prediction mode</u>, with a smallest prediction error among the calculated prediction errors for the predictions performed in the respective modes, calculating prediction errors for the predictions performed in each of the prediction modes corresponding to prediction directions <u>adjacent to the prediction direction of the first prediction mode</u>, and selecting a prediction mode among the

prediction modes corresponding to prediction directions adjacent to the prediction direction of the first prediction mode <u>and</u> the first prediction mode with the smallest prediction error among the calculated prediction errors in the prediction modes corresponding to prediction directions adjacent to the prediction direction of the prediction mode and the prediction error of the first prediction mode.

For example, if the vertical mode is taken as the first prediction mode of claim 9, the step of selecting the prediction mode in this exemplary scenario would comprise selecting the prediction mode among the prediction modes corresponding to prediction directions adjacent to the vertical direction <u>**and**</u> the vertical prediction mode. The selection would be based on the smallest prediction error among the calculated prediction errors in the prediction modes corresponding to prediction direction adjacent to the vertical direction and the prediction error of the vertical prediction mode itself. **There is no such scenario in Sun**. More particularly, Sun does not disclose any determination of the smallest error <u>among</u> the vertical prediction, the horizontal prediction, <u>and</u> the DC prediction, much less disclose that if the vertical prediction has the smallest error, for example, then the vertical right prediction (mode 6) and the vertical left prediction (mode 7) are carried out on the block. Therefore, claim 9 is not anticipated by Sun.

Claims 10 and 11 are patentable *at least* by virtue of their dependency.

Claim 12 recites features similar to those discussed above with respect to claim 1. Therefore, claim 12 is patentable for *at least* reasons similar to those given above with respect to claim 1.

Claims 13-17 are patentable *at least* by virtue of their dependency.

Claim 18 recites features similar to those discussed above with respect to claim 1. Therefore, claim 18 is patentable for *at least* reasons similar to those given above with respect to claim 1.

New Claims

New claims 19-23 are patentable *at least* by virtue of their dependency. Furthermore, the prior art of record does not disclose, teach, or suggest <u>always</u> performing at least three predictions for the block in the at least three different prediction modes as set forth in some variation in claims 19, 20, 22, and 23. Rather, Sun discloses performing, at most, two predictions on a block. A third prediction on the block is only carried out based on the results of the first two predictions (see FIGS. 9-15 of Sun).

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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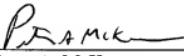
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